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Development of Bioreactor Auto-Sampling System for Real Time Product Quality Monitoring in Mammalian Cell Culture

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Abstract

Product quality attributes such as glycosylation, size and charge variants are critical characteristics for the development of biotherapeutics in mammalian cell culture processes in order to target a desired product profile. In an attempt to characterize the entire time-course of a fed-batch culture under different media conditions, a bioreactor autosampling device integrated with cell removal and sample retention systems and at-line instruments such as Patrol UPLC was developed to rapidly analyze the cell culture IPC as well as product quality changes in real time. This information can be rapidly translated for better process understanding and process control to enable optimization based on desired product quality profiles.